

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1 - 17. (cancelled)

18. (New) An emission control system for an internal combustion engine, comprising:

a NOx absorbent disposed in an exhaust passage of the internal combustion engine that stores and reacts NOx under certain operating conditions;

a NOx sensor disposed in the exhaust passage downstream of the NOx absorbent, a first output of the NOx sensor corresponding to a NOx concentration of exhaust gas flowing out of the NOx absorbent and a second output of the NOx sensor corresponding to a oxygen concentration of exhaust gas flowing out of the NOx absorbent;

a controller calculating an operating condition of the internal combustion engine and determining a deviation of the output value of the NOx sensor from a predetermined value when preselected engine operating conditions are met; and

said controller further indicating whether predetermined engine operating conditions are present, and in response to said determination, adjusting a fuel injection amount into the internal combustion engine based on said second output.

19. (New) The system recited in claim 18 further comprising a three-way catalyst disposed in said engine exhaust passage upstream of the NOx absorbent.

20. (New) The system recited in claim 18 further comprising an air-fuel ratio sensor disposed in the exhaust passage of the engine upstream of the NOx absorbent.

21. (New) The method recited in claim 18 wherein said controller further changes engine operation from a lean air-fuel ratio to a stoichiometric or rich air-fuel ratio based on said output of the NOx sensor.

22. (new) An emission control system for an internal combustion engine, comprising:

a NOx absorbent disposed in an exhaust passage of the internal combustion engine that stores and reacts NOx under certain operating conditions;

a NOx sensor disposed in the exhaust passage downstream of the NOx absorbent, an output of the NOx sensor corresponding to a NOx concentration of exhaust gas flowing out of the NOx absorbent;

a controller calculating an operating condition of the internal combustion engine and determining a deviation of the output value of the NOx sensor from a predetermined value when preselected engine operating conditions are met;

an air-fuel ratio sensor disposed in the engine exhaust passage; and

said controller further indicating whether predetermined engine operating conditions are present, and in response to said determination, adjusting a fuel injection amount into the internal combustion engine based on said air-fuel ratio sensor, wherein said controller further adjusts said fuel injection amount into the internal combustion engine independent of said air-fuel ratio sensor when said controller indicates said predetermined engine operating conditions are not present.

23. (New) An emission control system for an internal combustion engine, comprising:

a NOx absorbent disposed in an exhaust passage of the internal combustion engine that stores and reacts NOx under certain operating conditions;

a NOx sensor disposed in the exhaust passage downstream of the NOx absorbent, an output of the NOx sensor corresponding to a NOx concentration of exhaust gas flowing out of the NOx absorbent;

a controller calculating an operating condition of the internal combustion engine and determining a deviation of the output value of the NOx sensor from a predetermined value when preselected engine operating conditions are met; and

said controller further performing a sulfur decontamination process based on engine operating conditions.